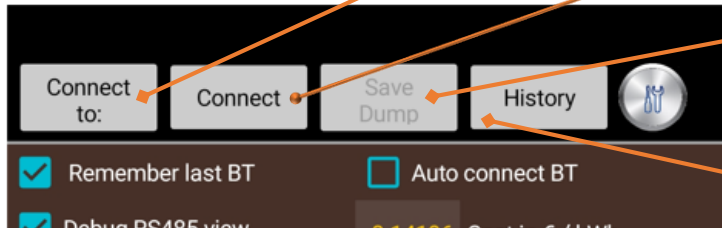


## SuSoDevs app v0.8

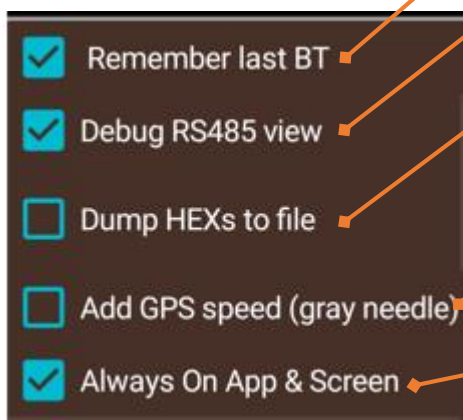


Bluetooth of the interface that connect with bike RS485 bus. Device must be paired with the phone/tablet previously.

Connect button with the interface, if you don't have selected "auto connect BT"

Save the debug file with HEXs codes of the RS485 bus. Only active when file is available and "Dump HEXs to file" is selected

Enter on the History screen. Only available if you have internet connection, GSM or Wi-Fi, and correct Firebase credentials.



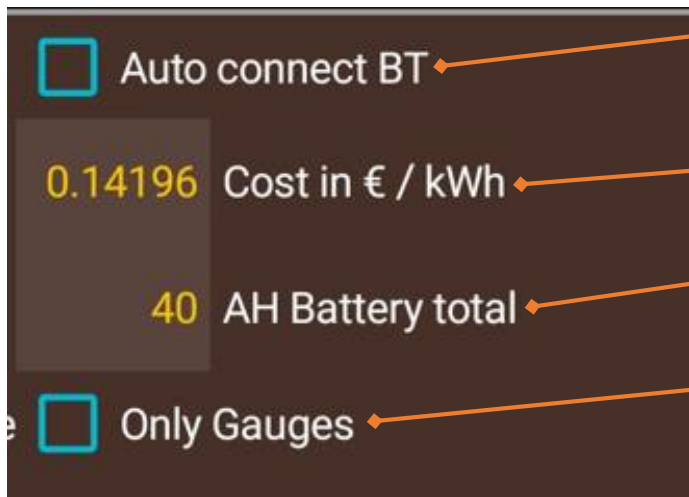
When you have chosen a Bluetooth device have the option to app remember and don't select again.

Display some buttons and tables for debugging and send command to the bike through RS485.

Capture and save in a file for outside analysis all the RS485 bus traffic in HEX values

When riding add the GPS coordinates to your history, also show with a grey needle over the odometer the GPS speed (more accurate than factory display) Also with double needle you can adjust the correct ratio for your bike easy and accurate. For Android battery conservation if no GPS values are received at 5 minutes the app disable the GPS.

Try to maintain the app always open and in foreground. Very useful if you use a phone or a tablet as your main display. It depends of the Android version you have, and Battery optimization settings configured. Also when on, creates the background service for Alarm notification. Unchecked and hitting two times the back button on your Android device close the app.



If remember last BT is selected, app try to connect automatically during 2 minutes to the remembered Bluetooth interface.

0.14196 Cost in € / kWh

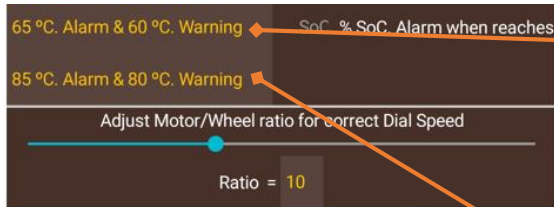
Your cost in €/kWh of the electricity for the Charging and Riding cost estimations.

40 AH Battery total

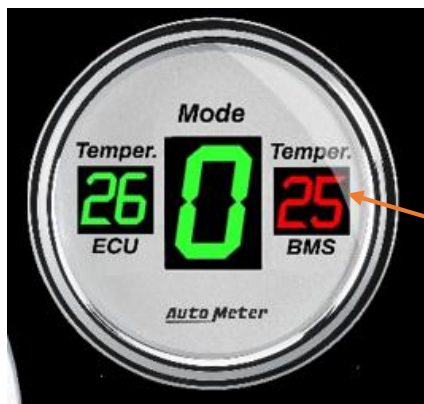
Your Battery capacity in AH total, for correct estimations of remain KMs to ride.

Only Gauges

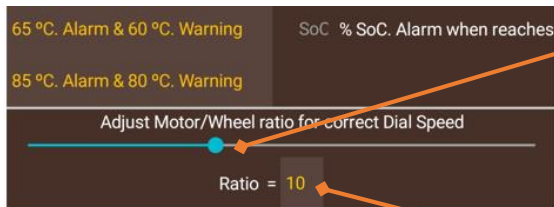
Special display screen with only the main dials and gauges, also lock the app to the mode in which this setting is checked, or Landscape or Portrait.



BMS or Battery Management System. Temperature alarm and warning at raised these temperatures. Warning is always 5°C minus the selected Alarm temperature. Alarm is an acoustic and a visual notification and in case you have valid Firebase config is raised in each app running on any of your Android devices with background service enabled. Warning is a visual blink in red on the Drive Mode gauge.



ECU or Engine Control Unit. Sometime also referred as Controller or FOC. Temperature alarm and warning at raised these temperatures. Warning is always 5°C minus the selected Alarm temperature. Alarm is an acoustic and a visual notification and in case you have valid Firebase config is raised in each app running on any of your Android devices with background service enabled. Warning is a visual blink in red on the Drive Mode gauge.



Whit this slider you can adjust the correct speed on app odometer. It depends of the Bike type (TC50 is 10, TC-Max is around 20) or if you have changed the wheels or the factory drive belt or pulley. Optimum procedure would be select the "add GPS" setting and driving with carefull on a straight, move the slider until both needles overlap.



You can enter manually the ratio with the numeric keyboard, too.



Firestore URL of your Realtime Database for store your history and alarms. Please read the guide below for creating first time in Google Firebase.

Api secret or token for authorization to read or write in your Firebase Database. Please read the guide below for creating and copy here your token.

Write or not your history in your cloud DB, values of charging like Voltage, Current, SoC, etc. and Riding like GPS position, speed, Current, SoC, etc.

When will be written to the database, each minutes for charging BMS values. Useful for limit the amount of data used in your GSM connection.

At each meters travelled upload your GPS position and ECU values to your Database. Useful for limit the amount of data used in a GSM connection. On a TC-MAX at 100Km/h top speed, minimum value is 100mts.

For save the settings values, close this screen with the same settings button that open.



Riding, Only Gauges screen in Landscape

Link interface led, when light red the RS485 link is established and are communication with the Bluetooth interface.

Remain Km calculated based on your current mode, the battery percent of charge and total capacity. Also on digital display, actual clock.

Drive Mode gauge, in Parking mode a P is showed. Also Temperature of the ECU and the BMS, that will be blink in red if warning temperature threshold is reached.

Settings button, to return to other screen modes or settings. Hitting disables "only gauges" mode.

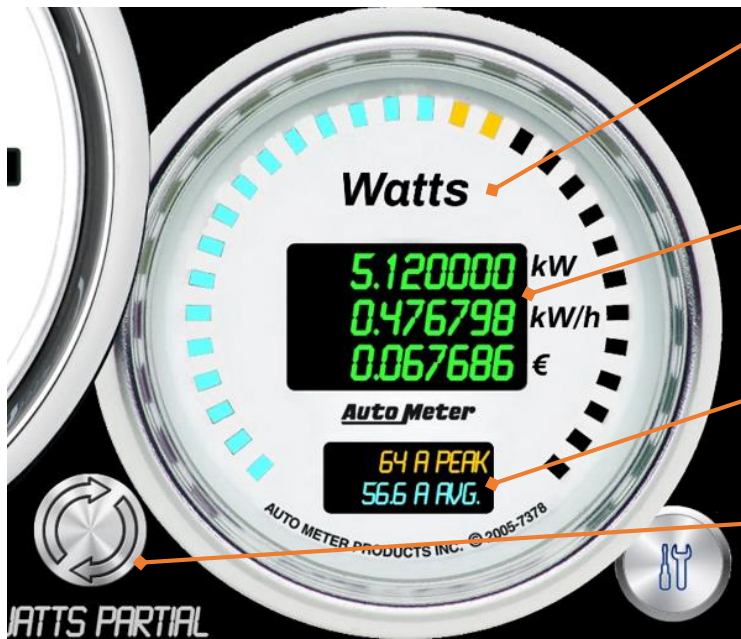
Riding, Only Gauges screen in Portrait

Main Odometer with current speed, Gps speed, and Battery percent of charge. The 4 squared digits actually only show Alarm condition and Parking mode. At left, digital display shows the partial Km and meters travelled from last reset of partial KM.

Reset to 0 the partial Km & meters travelled.





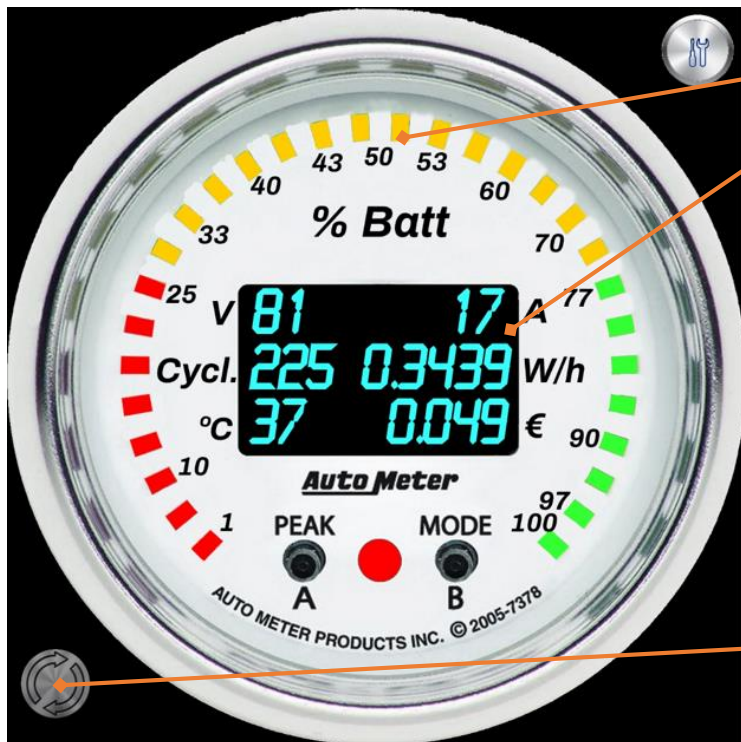


Consumed meter. Real-time and accumulated energy spent riding. Outside led ring show real-time watts in peak (green, yellow & red) and average (blue)

3-line centre display show in first line the accumulated kW spent. Second line partial kW/h spent from last watts reset. Third line is the estimated cost in Euros of this partial trip.

2-line display show in real-time the Current consumed in Peak mode and in Average, both in Amperes and 100mA precision.

Reset button to 0 the kW/h and the Euros cost.




Charging, Only Gauges screen.

External led ring shows actual percent of charge

Internal digital display shows 6 values:

Tension of your battery in volts, charge current in Amperes. The total number of Cycles of charge that accumulate your battery. Temperature of your BMS and the W/h and Euros spent from the last reset of charge.

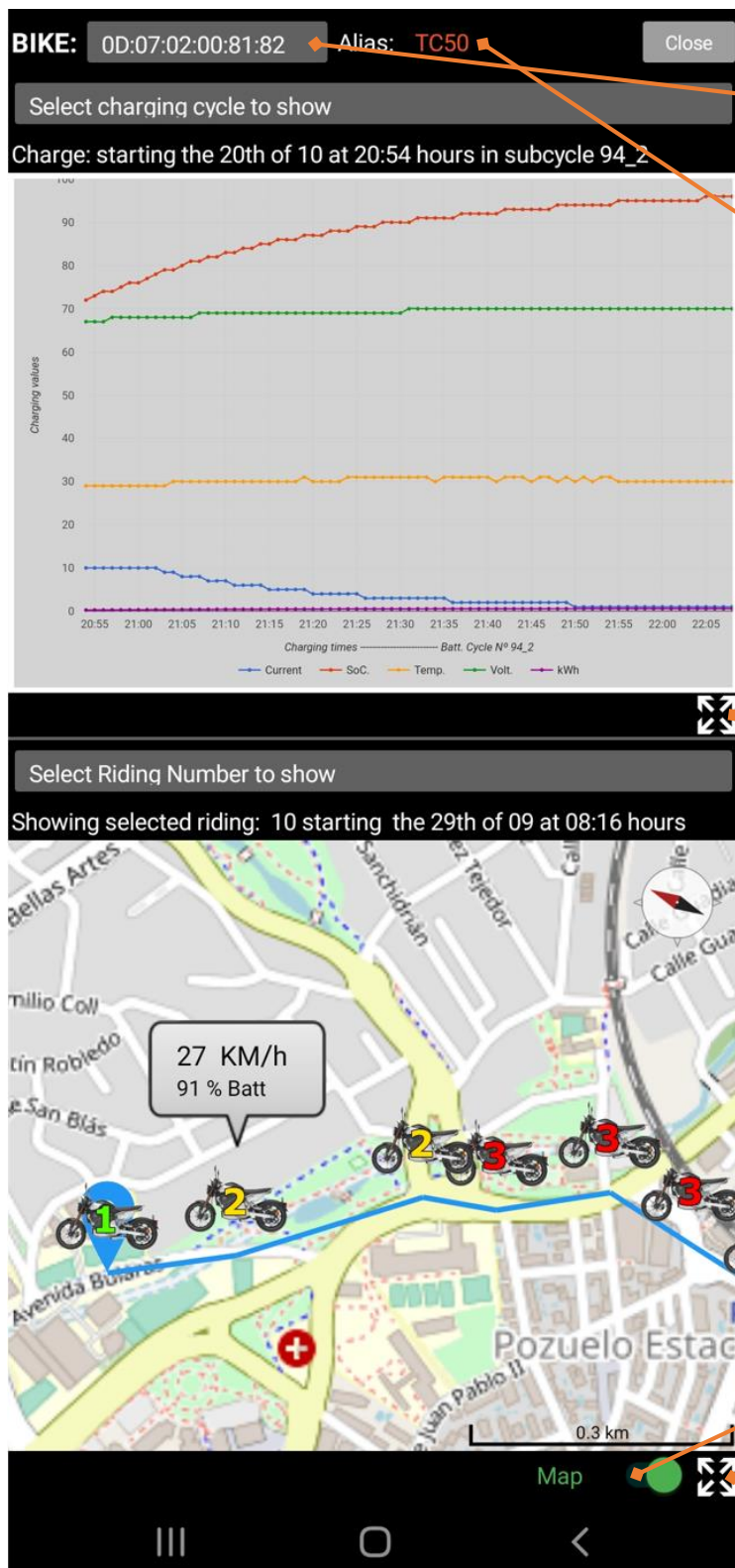
Reset to 0 the W/h and cost of the charge cycle.

BMS debug				
Volts	Soc	BMS °C	Amps	5
0	0	0	0	0
6	Cycle H	Cycle L	9	Charging
0	0	0	0	0
ECU debug				
Mode	Current H	Current L	Speed H	Speed L
0	0	0	0	5
ECU °C	7	8	Parking	10
0	0	0	0	0
GPS/GSM debug				
1	2	3	4	Hour
0	0	0	0	0
Minutes	7	8	9	10
0	0	0	0	0
				

Debug screen tables. For debugging purposes, in white labels the know parameter, below in black the actual value decoded from the RS485 bus.

Meaning of white labels with numbers only are actually unknown.

Alarm Label.



## History Screen:

You can have multiple Bikes in history, each defined by the Mac Address of the Bluetooth interface attached to the RS485 bus in the bike.

For easy identification of your multiple bikes, you can set a unique Alias for that bike.

By default, is showed the last charging cycle in the graph viewer, but you can choose any previous charging cycle. The charging cycles are listed and grabbed on the database with two numbers. First is the total charging cycle count in your BMS, second is a subcycle prior to complete a total cycle. Below of the selection you can see the hour and date of the showed cycle chart. On chart, along the time, the line representation of 5 values, Current, SoC, Temperature, Voltage and kWh.

Maximize to full screen the chart or minimize.

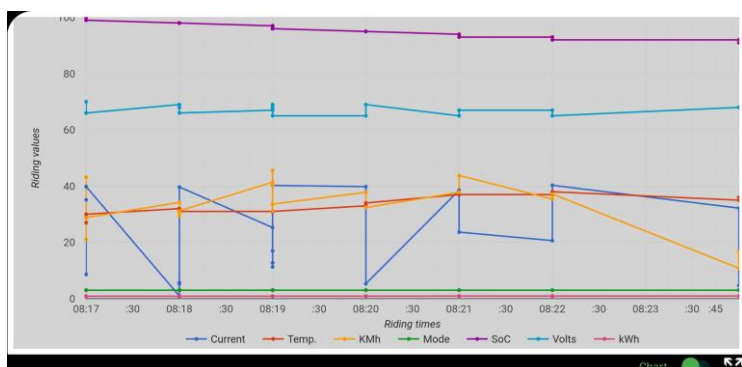
## Riding map or chart to show

By default, is showed the last riding in the map or graph viewer, but you can choose any previous travelled trip. If GPS is on during your ride, location coordinates are grabbed with the ECU parameters and you can see on a MAP. If no GPS coordinates are grabbed only chart can show. Below of the selection you can see the hour and date of the showed ride.

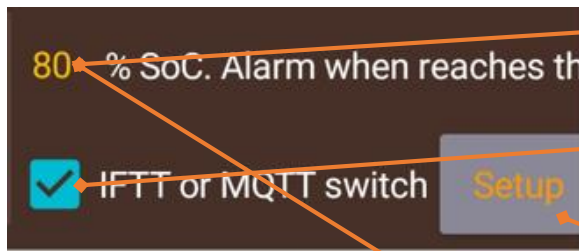
In MAP viewer, you can see the plotted out coursed and a bike marker with your actual mode in that point, if you tap the icon also information of SoC and speed at that point.

Switch between Map or Chart viewer

Maximize to full screen or minimize.



In chart viewer mode, along the time, lines representation of your ECU values, Current, Temperature, Speed, Mode, SoC, Voltage and kWh for the selected riding.



Maximum percent of charge, when reaches, or sound alarm, or send a smart switch command.

If selected, No sound alarm trigger but a IFTTT or MQTT command is send through WiFi or GSM to your Smart Switch controlling your Battery Charger.

Set the percent to start charger smart switch & better electricity tariff hours on labour days. Weekends without hours intervals.

Start at:  % minimum and stop at 50 % max Actual SoC = 35

Interval from:  to:  ☒ Simulate Bike connection

☐ IFTTT

To:

Subject:

KEY:

OFF Event:  ON Event:

Test

Setup screen for programing and commands definitions.

Percent of Charge at will be start the charge.

Maximum percent at will be stopped the charging.

Starting charging hour on week days, useful for selecting better electricity tariff.

Ending charging time of the selected rate.

Choose IFTTT protocol to control your Smart Switch. [https://ifttt.com/maker\\_webhooks](https://ifttt.com/maker_webhooks) is the template to use.

Email sent To: only for netiquette, any email will be used here. Same for Subject:

Enter here the Key provided by ifttt.com for your account and visible in your WebHook documentation.

Payload send to ifttt.com that defined your Webhook applet fired. One for ON, another for OFF.

Test the IFTTT configuration, or force manually the smart switch charger, bypassing the programing hours or SoC rules.

Choose MQTT protocol to send commands to your Smart Switch. Broker, Topics and Payload at least is needed to work. In this picture a local net Tasmota device is commanded.

Force On or Off to test your settings or to force charging overriding programing times or battery percent's.

Save all Mqtt values.

Log status; 8 lines, or 30 lines if "debug RS485" enabled.

Close config and saving all settings of this screen.

☒ MQTT

Broker:

Port:

Username:

Password:

Client ID:

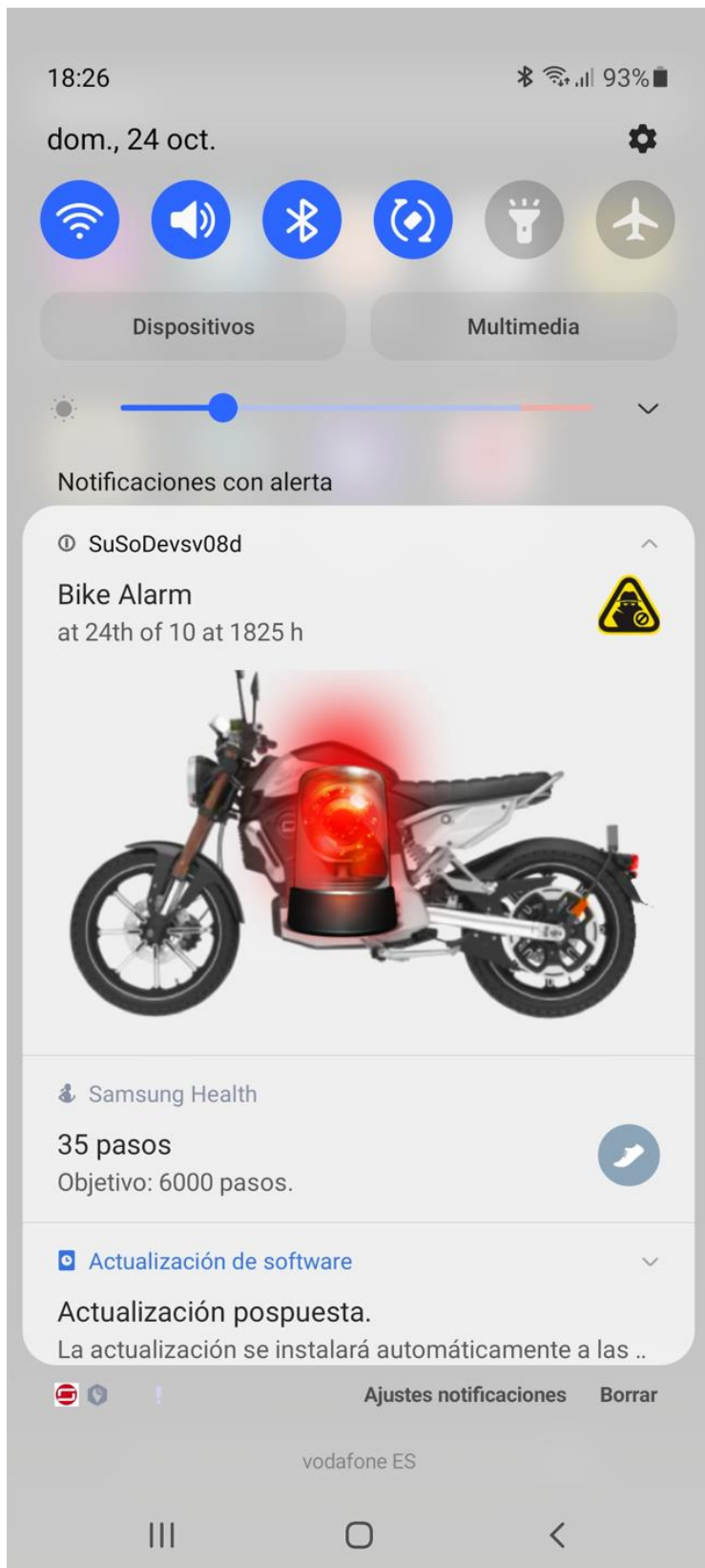
cmd Topic:

stat Topic:

Payload:

00:06:06 -> Connecting  
 00:06:06 -> MQTT - Invalid State.  
 00:06:06 -> Connected  
 00:06:07 -> MQTT - subscribed  
 00:06:16 -> SoC percent inside charging values





You can run the app in any second android device for history observation or Alarm notifications in real time, as long as you have the correct Firebase credentials configured on it and the background service running (see the “Always on” note on settings chapter). You can see in the notifications area of your device if service is running or not, and in the icon app with a number or not. Of course, first android in your bike with GSM or WiFi connection active to allow immediate Firebase communication of alarm.

Alarm in background is only active for general Alarm of Bike. BMS or ECU temperatures alarms or SoC percent alarms are only visible and audible in the foreground app.



Example of values on your Firebase realtime database. In your account web page, you can review, edit or change wrong values or save to JSON any register.

